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DIV. OF OIL, GAS & MINING

Form MR-REV-att (DOGM - Revise/Amend Change Form)
(Revised September 14, 2005)

Application for Mineral Mine Plan Revision or Amendment

Operator: Miracle Rock Mining & Research File Number: M/015 10040
Mine Name: Rockland Mine

Provide a detailed listing of all changes to the mining and reclamation plan that will be required as a result of this change. Individually list all maps and drawings that are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise or amend the existing Mining and Reclamation Plan. Include page, section and drawing numbers as part of the description.

DETAILED SCHEDULE OF CHANGES TO THE MINING AND RECLAMATION PLAN			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
<input type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input checked="" type="checkbox"/> REMOVE	All information from Rockland Mine Volume "Notice of Intent to Commence Large Mining Operations"
<input checked="" type="checkbox"/> ADD	<input type="checkbox"/> REPLACE	<input type="checkbox"/> REMOVE	Plan submitted 11/15/08 to above stated Volume
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I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments and obligations, herein.

DAVID TAYLOR
Print Name

David Taylor Pres.
Sign Name, Position

1/15/08
Date

Return to:

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801
Phone: (801) 538-5291 Fax: (801) 359-3940

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Instructions - Amend or Revise Mining Plan

FOR DOGM USE ONLY:	
File #:	M/ <u>1</u>
Approved:	_____
Bond Adjustment: from (\$)	_____
to \$	_____

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Form MR-REV-att (DOGM – Revise/Amend Change Form)
(Revised September 14, 2005)

Application for Mineral Mine Plan Revision or Amendment

Operator: <u>Miracle Rock Mining & Research</u>			
Mine Name: <u>Rockland Mine</u>		File Number: <u>M/015 /0040</u>	
<p>Provide a detailed listing of all changes to the mining and reclamation plan that will be required as a result of this change. Individually list all maps and drawings that are to be added, replaced, or removed from the plan. Include changes of the table of contents, section of the plan, pages, or other information as needed to specifically locate, identify and revise or amend the existing Mining and Reclamation Plan. Include page, section and drawing numbers as part of the description.</p>			
DETAILED SCHEDULE OF CHANGES TO THE MINING AND RECLAMATION PLAN			
			DESCRIPTION OF MAP, TEXT, OR MATERIALS TO BE CHANGED
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Print Name _____

Sign Name, Position _____

Date _____

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Division of Oil, Gas and Mining
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Salt Lake City, Utah 84114-5801
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to \$	_____

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JAN 14 2008

DIV. OF OIL, GAS & MINING

January, 15, 2008

Minerals Program
Division of Oil, Gas, and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

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JAN 14 2008
DIV. OF OIL, GAS & MINING

RE: Fifth Review of Notice of Intention to Commence Large Mining Operations, Miracle Rock Mining and Research, The Rockland Mine, M0150040, Task 1830, Emery County, Utah

Miracle Rock Mining and Research, owner and operator of the Rockland Mine (permittee), hereby submits the deficiency responses to the fifth review of Notice of Intension to Commence Large Mining Operations.

A Notice of Intention to Commence Large Mining Operations for the Rockland Mine was submitted on August 15, 2006. The Division's review found deficiencies in this submittal. This deficiency document was received by Rockland Mine on or around November 13, 2006 and stated that the "Operator has an additional 60 days after submitting this response to ensure that it is approvable." The permittee submitted the plan on January 10, 2007. The review document dated March 12, 2007 instructed that the Permittee must submit an approval plan immediately. The permittee requested an extension to April 25, 2007 in which the Division granted.

The permittee again requested an additional 30 day extension to May 25, 2007 in order to retain outside consulting services to respond to the Division's deficiencies. Submittal was made on May 21, 2007 and contained a binder with a developed reclamation plan for the facility with associated maps and appendices. The Division's review this plan found it deficient to the minerals regulatory program. Deficiencies were received by the permittee on or about October 15, 2007.

On November 14, 2007, the permittee met with the Division to discuss their concerns with the deficiencies and to agree on a timeframe for the submittal of a consolidated permit. The attached deficiency responses and permit information should satisfy deficiencies to the minerals regulatory program.

Attached are the deficiency responses along with a revised operation and reclamation plan for the Rockland Mine. This plan is divided into various sections. Please note that the deficiency concerning bonding has been postponed until the permit is fully approved by the Division.

I appreciate the Division's patience, understanding, and willingness to work toward a resolution that is beneficial to both parties. If you have any questions or concerns regarding this Deficiency Response document, please contact me at 435-286-2222.

Sincerely,

David Taylor
President

 1/14/08

Cc Dennis Oakley

Enclosures Complete Mining and Reclamation Plan

This Deficiency Response document responds to the October 15, 2007 review of the Division of Oil, Gas, and Mining. The deficiencies are formatted in the R647-4 regulations and bolded while the responses are italicized.

GENERAL COMMENTS

The Division requests that you number the pages of the submittal in Section R647-4-110 Reclamation Plan and provide a table of contents as part of the submittal. (BE)

The permit of the Rockland Mine has been developed to follow the format of the R647-4 regulations. The permit consists of a consolidated operation and reclamation plan which include all the components of these regulations. The permit for the Rockland Mine is being submitted as a complete consolidated volume. Please remove the material from the binder which was submitted in May 2007 and replace with the attached permit packet.

R647-4-105 - Maps, Drawings & Photographs

Topographic base map, boundaries, pre-act disturbance

The map titled, "Rockland Mine Site", indicates there are a total of three sheets. (One note on the drawing says, "The centerline information on the mining done to date is on a separate drawing [sheet 2 of 3]".) The Division can only locate sheet one. The access road on this map is not labeled as access road. If the road has a specific name, please identify it. The map text indicates there is 4.178 acres disturbed, but this appears to exclude the pad outslope. The map should show the entire disturbed area and the acreage of this area. The map shows several areas: Topsoil storage, refuge stockpile, overburden stockpile, among others. Within these identified areas, please show the area dimensions of each. (BE and PBB)

The permit for the Rockland Mine is being submitted as a complete consolidated volume. All maps have been completely reconstructed and referenced in the text sections of the permit. Please remove the material from the binder which was submitted in May 2007 and replace with the attached permit packet.

The map titled, "Rockland Mine Site" does not have any topographic lines showing elevations, contour intervals etc. This information must be included. (BE)

Refer to deficiency response above.

The impoundment must be shown on the map. The words 'Run off pond' appears on the map titled, "Rockland Mine Site," but there is no drawing with the dimensions. This information must be included on the map. (BE)

This map is no longer applicable to the Rockland Permit.

The same map must show route from the impoundment to the natural drainage. The natural drainage must be shown as well. Is this the same drainage that is described in 110.2.6; 20 feet in length? How does this route and natural drainage interplay with the 'future disturbance area'? (BE)

Natural drainage systems adjacent to the Rockland Mine site have been identified on maps RM-106-1A (Surface Facility Map) and RM-107-1A (Drainage Control Map). Refer to these maps for further review.

The "Rockland Mine Site" map does not show where waste material will be temporarily located. If waste material is not temporarily located onsite for future removal, then indicate that information in the text. (BE)

The "Rockland Mine Site" map is no longer applicable to the Rockland Permit. Please refer to map RM-106-1A (Surface Facilities Map) for location of temporary waste disposal area.

The "Rockland Mine Site" map, which the text refers to as 105.1E, does not show the location of the portals located on the north side of the facility area. The text indicates the map identifies their location, however, they can't be directly located. They are labeled on figure 105.2-A, however detail is lacking. They must be shown on the "Rockland Mine Site" map and on the reclamation facilities map. (BE)

The "Rockland Mine Site" map is no longer applicable to the Rockland Permit. The two (2) portals accessing underground mining operations of the Rockland Mine are identified on map RM-106-1A (Surface Facilities Map).

Map 105.1, Map Site Location Map, is too general it does not provide the necessary detail for ephemeral streams, springs etc. More detail pertinent to the location is required. Drainage and erosion systems cannot be designed and developed without detail. (BE)

A general location map has been developed for the Rockland Mine site. Refer to map RM-104-1A for locations of major drainage systems. Refer to map RM-106-1A (Surface Facilities Map) for ephemeral drainage systems.

There are four squares shown on Map 105.1, are each of the squares on state lands? The map text is unclear. Please be specific and provide necessary information regarding which or all of these areas is state lands. (BE)

A surface ownership map (RM-104-2A) has been supplied that shows the location of the State Mining Lease (ML-50776) within the State Lands. BLM lands have also been identified on this map.

Map 105.1 must have the appropriate labels for access roads to the site. Since there is no legend, it is assumed the black lines are roads. What roads are they? They must be labeled. (BE)

Map 105.1 is no longer applicable to this permit application. Refer to map RM-106-1A (Surface Facilities Map) for all Rockland Mine facilities.

There is indication of the existence of maps 105.D and 105E. The Division does not have these maps. Please submit. (BE)

The permit for the Rockland Mine is being submitted as a complete consolidated volume. All maps have been completely reconstructed and referenced in the text sections of the permit. Please remove the material from the binder which was submitted in May 2007 and replace with the attached permit packet.

Surface facilities map

The disturbed area outline of the map labeled 105.1E 105.2 does not include the water treatment pond. Please redraw the line to include this area. (PBB)

The permit for the Rockland Mine is being submitted as a complete consolidated volume. All maps have been completely reconstructed and referenced in the text section of the permit. Please remove the material from the binder which was submitted in May 2007 and replace with the attached permit packet. Refer to map RM-106-1A (Surface Facilities Map) for all Rockland Mine facilities.

Drawings or Cross Sections (slopes, roads, pads, etc.)

If the plan for blasting the top portion of the highwall is retained (see Section 110.2 of this review), the plan needs to contain a geologic cross section of the highwall area. (BE & PBB)

Figure 110.2-C has been amended to show an enlarged area of a typical geologic cross-section.

A stockpile is described in the text, but it is not shown on the map titled Rockland Mine Site. The text refers to it as a subsoil pile. Please be consistent in terminology and labeling. Show the 'subsoil pile' on the map. In addition, provide a more detailed drawing showing the acidic material within the pile, and show the subsoil that will not be used in reclamation on the drawing. (BE)

The "Rockland Mine Site" map is no longer applicable to the Rockland Permit. The subsoil pile is identified on map RM-106-1A (Surface Facilities Map). The text gives a narrative of the subsoil pile as follows:

"Sampling of the segregated soil piles was conducted in 2005 and 2007 (refer to analysis in Appendix D). This sampling indicated that there exist acid forming materials (pH below 6.0) in the top 1.0 feet of the subsoil material on the south end of the storage pile. The extent of the acid

forming materials is undetermined and will not be known until the soil is moved from this pile. Upon use, extensive field testing will be conducted to ensure this soil is buried so not to impact vegetation growth at reclamation.”

If the extent of the toxic material would be known, this knowledge would justify showing this material on the surface facilities map. However, since the extent is not known, the text description will suffice. All toxic material unsuitable for plant growth will be buried in the fill and covered with at least two feet of non-toxic material. Burying of toxic material can occur anywhere within the fills. No one area will be used for toxic material burial.

Submit a reclamation treatment map that includes the reclamation topography. The submitted text indicates the reclamation information is on map 105.2. The Division does not have a copy of 105.2. The Division has 105.2-A and 105.1E 105.2, and map 105.1. Ensure the reclamation treatments are identified, labeled, and distinct from one another. Please ensure the reclamation acreage is shown and identified. (BE)

Reclamation treatment maps have been provided in the Maps Section (Maps RM-110-1A through RM-110-4A)

On the reclamation treatments map include the topography after reclamation of the treatments pond. (BE)

The contour intervals are not such to show this type of resolution. Fill slopes will be constructed on a 3H:1V slope configuration. The reclamation of the impoundment will consist of this same slope.

Show erosion and run off control features on the reclamation treatments map. (BE)

Drainage control is shown on map RM-110-3A (Drainage Control Map) in the Maps Section.

On the reclamation treatments map show the final slopes within the natural topography. (BE)

On all reclamation maps, the natural topography is shown. However, the contours are on a 50 foot contour interval. To show this topography at a higher resolution, an extensive survey would be needed which is cost prohibitive at this point.

As a possible remedy for the Divisions concerns, five foot contour intervals have been extrapolated within the disturbed area on a 3H:1V slope configuration. The text in the permit say the disturbed will be blended into the existing natural slopes in the adjacent areas.

R647-4-106 - Operation Plan

Type of operations conducted, mining method, processing etc.

Where is the stockpile area for the shale? Please explain in the narrative and show on a map. The narrative should include the dimensions and volume of the stockpile. (BE)

This information has been included in the text sections of the rewritten permit application.

Please explain how the stockpiles will be managed for erosion and run-off purposes. Address any stockpiles that are acidic, provide dimensions of the stockpile. Include specific stormwater runoff plans for these piles. (BE)

This information has been included in the text sections of the rewritten permit application. Topsoil piles have been protected from runoff migrating from undisturbed areas by constructing a diversion ditches that divert runoff away from piles. Subsoil piles utilize existing drainage control practices found on the mine pad (i.e. berms, impoundment).

106.5 Existing soil types, location, amount

The plan says one inch of topsoil and six inches of subsoil will be spread over the site. Total topsoil and subsoil volumes have been provided as well as anticipated. However, to ensure the identified volumes are appropriate for 7-acre total area coverage at these specified depths, please calculate the volume required to achieve the specified coverages of the topsoil and subsoil over the entire area that will receive subsoil and topsoil. (BE)

Soil depths appropriate for covering the reclaimed area was calculated by dividing the area into the total volume of available soil (refer to topsoil and subsoil summary table in the Tables Section)

Existing vegetation - species and amount

The following comment was in the previous review and still applies since this portion of the plan was not changed:

Please correct the vegetation ground cover percentage on page 9, Section 106.7. This value should be broken into two components, understory and canopy. The understory value is 2.8 percent, and the canopy value is 24.25 percent. The success standard is 18.9 percent. Please make the appropriate corrections. (PBB)

The amended text in the Operations Plan Section gives the following information;

*"The Rockland Mine disturbed area covers approximately 5.82 acres. Prior to disturbance, the native vegetation of the mine and surrounding area consisted of trees, shrubs and grasses. Tree varieties consist of pinions (*Pinus edulis*) and Utah junipers (*Juniperus osteosperma*). A diverse shrub community exists in the area with the major types being black sagebrush (*Artemisia nova*), shadscale (*Atriplex confertifolia*), fourwing saltbrush (*A. canescens*), and galleta (*Hilaria jamesii*). Grasses typical of the area include salina wildrye (*Leymus salinus*), and Indian ricegrass (*Oryzopsis hymenoides*).*

A vegetation survey was conducted on an undisturbed area adjacent to the mine site. Twenty transects were evaluated using an ocular method (line intercept method) for estimating percent cover by type. Types recorded are living cover, litter, rock cover, and bare ground. Living cover is broken into two components; understory and canopy cover.

Results of the survey found an understory cover of only 2.7% and canopy of 24.3%. Canopy consisted of pinyon pine and Utah juniper cover. Litter averaged only 1% of the total cover, while no rock or rock fragments were found in the study area. Bare ground averaged 63% of the total area. A spreadsheet of the vegetation survey is found in Appendix E. Based on the results of the vegetation survey, revegetation must achieve a success standard of 70% of the pre-mining vegetative ground cover or 19.6%.”

The data from the vegetation survey has been placed in Appendix E.

Location & size of ore, waste, tailings, ponds

The operator has provided a description of this pond’s dimensions but failed to provide the exact location in reference to the disturbed area, showing it outside of the permit area on Figure 105.2. Please provide a figure showing the disturbed drainage conveyance system and how drainage will reach this structure. The plan also needs to show watersheds, areas both on and off site, contributing to the site. (TM)

The permit for the Rockland Mine is being submitted as a complete consolidated volume. All maps have been completely reconstructed and referenced in the text section of the permit. The request from the above deficiency has been included on map RM-107-1A (Drainage Control Map) in the Maps Section.

R647-4-107 - Operation Practices

Erosion control & sediment control

Please show how erosion is minimized and sediment is kept from leaving the site. It is not apparent how the drainage is routed to the pond; please describe this process as it exists. This needs to be shown on a map showing topography and disturbed boundaries so one see the adequacy of the treatment. (TM)

Refer to deficiency response above.

You are also required to obtain and fill out the UPDES General Construction Storm Water Permit at <http://www.waterquality.utah.gov/UPDES/stormwatercon.htm> which will includes a Stormwater Pollution Prevention Plan (SWPPP). This is not a requirement of the R647 rules but is a requirement of the Division of Water Quality. (TM & PBB)

A Notice of Intent (NOI) for a Multisector General Industrial Permit has been submitted to the Division of Water Quality. A requirement of this permit requires a storm water pollution prevention plan to be developed for the site. This plan has been developed. The SWPPP is kept on file at the Miracle Rock Mining and Research office in Emery, Utah.

R647-4-109 - Impact Assessment

Impacts to surface & groundwater systems

The plan does not fully explain the potential impacts to surface and ground water. The site is in close proximity to some mines that have documented large quantities of groundwater encountered in drilling or mining of coal. Please provide a geologic description of the humate resource, the dip of the beds, and the depth to which you intend to mine and the potential to encounter groundwater. Please provide these designs and mining related details. (TM)

Section R647-4-109 Impact Assessment has been included within the re-written Rockland Mine permit. Please review this section for required information.

Slope stability, erosion control, air quality, safety

The statement in the narrative is inadequate regarding erosion control, slope stability, air quality, and safety. There are existing highwalls in the area, and their management must be addressed regarding all of the above. What are the current/mining slope angles? (BE)

This information has been included in Section R647-4-109 Impact Assessment. Please review this section for required information.

Run off and erosion control must be addressed. How will topsoil stockpiles and dump area erosion be controlled? (BE)

This deficiency has been responded to above.

R647-4-110 - Reclamation Plan

Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Please include a narrative or designs showing how erosion will be minimized on roads being used during reclamation. No blocking or restrictions that impede drainage or adversely affects the road should occur. (BE)

A commitment to comply with the R645-4-111(Reclamation Practices) regulations have been included in the permit application. This commitment requires the operator to "conduct reclamation in a manner such that sediment from disturbed areas is adequately controlled."

It is expected the access road is going to be revegetated. All disturbed mining areas, including roads, must be revegetated unless a variance is requested. Please elaborate. (BE)

The following narrative has been included in the Reclamation Section:

"The Rockland Mine has one (1) access road to the mine site. Initial road construction consisted of grading native material to the outcropping Humic Shale. The access road follows the natural contour of the land to the mine pad site. It is approximately 700 feet in length on a 23% grade and averages 15 feet wide.

Reclamation of the road will utilize a track mounted back-hoe and dozer. Reclamation of the road will be conducted after all other mine site features have been reclaimed. Upon completion of the mine pad and slopes, reclamation will continue following the disturbed footprint of the road. A dozer will rip the road base to a depth of approximately 18 inches. A track-hoe will commence contouring to blend the disturbed area to match the contour of the surrounding area. When a matching contour has been achieved (field fit), pocks will be placed randomly throughout the disturbed area. Pocks will be sized approximately 1.5 to 3.0 feet in diameter by 12 inches to 1.5 feet deep. Pocks are designed to control erosion by trapping runoff."

The reclamation plan further commits to seed all reclaimed area with the approved seed mix as outlined in Table 2 of the plan. Please review Section R647-4-110 (Reclamation Plan) in its entirety for the complete reclamation of the Rockland Mine.

The narrative indicates the highwall will be reclaimed to the extent possible, but please include a commitment to reclaim highwalls in accordance with the reclamation practices in R647-4-111.7. Please also include a scale on the cross sections. (PBB & BE)

A commitment to comply with the R645-4-111 (Reclamation Practices) regulations have been included in the permit application. This commitment requires the operator to reclaim and stabilize highwalls "by backfilling against them or by cutting the wall back to achieve a slope angle of 45 degrees or less."

The highwall elimination plan within Section R647-4-110 (Reclamation Plan) includes a detailed narrative for the reclamation of 1500 feet of highwall at the Rockland Mine. This narrative references typical figures showing slope configurations, soil placement, and pre- and post-reclamation contours.

According to the plan, highwalls will be backfilled with material to 3v:1h or 1v:1h slopes, and the remaining sandstone cliff will be blasted to create a rubble slope and completely eliminate the highwalls. The Division recommends against blasting the sandstone cliff tops. These cliffs are a natural part of the area topography, and they could be left. (PBB & BE)

The surrounding undisturbed cliffs adjacent to the Rockland comprise of broken and weathered boulders along the sandstone outcrops. The permittee feels that by blasting (or popping) the sandstone cliffs, this process will eliminate the steep cliff hazards, provide cover for small mammals, provide shade protection to vegetation, control erosion, and provide an aesthetic value that mimics the slopes and ridge tops of the adjacent areas.

If the highwall is to be blasted, the plan should show how this would be done. Consider a selective blasting plan for the top of the highwall face that includes management of explosive materials. In your consideration of the selective blasting plan, a plan and profile view of the drill pattern including hole diameter, hole depth, hole angle, overburden depth,

and drill inclination angle(s) are typical. Estimate the volume of material that will be blasted. What is the estimated size range of the boulders that will result from blasting? Indicate that benchmarks, control points, lines and grades will be made as necessary for controlled blasting of the highwall area. Please include in the narrative that all blasting work will be performed in accordance with MSHA regulations and any other applicable local, state or federal safety standards. Indicate that appropriate permits will be obtained as required. (BE)

All blasting will be conducted in accordance to the blasting plan that has been included in Appendix A of the Rockland Mine permit.

The narrative indicates that toxic and/or acid-forming materials will be buried. Please quantify these materials and show where they will be placed and how deeply they will be covered. (BE & PBB)

The narrative indicates that the extent of toxic materials is unknown. However, the narrative also indicates that all toxic materials will be buried with at least two feet of non-toxic materials. Toxic material burial will not be limited to one location, but will be throughout the fill areas on the pad.

Please include a commitment to reclaim the sediment pond. (BE & PB)

A commitment to reclaim the sediment pond (impoundment) has been included in Section R647-4-110 (Reclamation Plan) as follows:

"One impoundment exists within the disturbed area of the site. This impoundment is located mid-way and along the south side of the access road. The impoundment measures approximately 15 feet in diameter by 3 feet deep. This impoundment has been constructed to treat runoff from the mine pad area and a portion of the access road area. During road reclamation, the impoundment will be reclaimed to compliment the topography of the surrounding area. The contour of the regraded area will be identical to the adjacent undisturbed area.

Drainage from the impoundment was routed along the side of the road to a natural drainage approximately 700 feet away. This area will be reclaimed as part of the road reclamation and no other drainage will be constructed.

Erosion control will be provided using deep gouging techniques. Deep gouges are constructed to retain moisture, minimize erosion and create and enhance wildlife habitat.

The entire area will be reseeded with the approved seed mix in Table 2."

The text indicates gouging techniques will be used as a means of erosion control. Further information is required such as depth and dimension of gouges, distribution, and pattern. This erosion control technique will be used throughout the entire area? If not, show locations of where this technique will be used on the reclamation treatments map (expected future submittal). Are there slope angle limits at which this approach will not be used?

Consideration can be given to using dozer basins on steeper slope areas to harvest water. (BE)

Deep gouging techniques have been detailed in the narratives of all reclaimed areas. Dimensions, distributions, and patterns for the gouges have also been given (i.e. 3 feet in diameter by 1.5 feet deep, throughout the reclaimed area, and random).

If waste materials are stored on site, describe their location and size of the storage area. There is a comment that all waste material will be transported off-site, but another comment indicates that deleterious/waste materials may be used as fill. These comments must complement each other; therefore, text clarification is required. Provide a table listing the deleterious and waste materials (they may be the same) and estimated quantities. (BE)

The context in which waste materials is used is meant to mean "trash". Trash will be temporarily stored on-site. Deleterious materials means toxic or acid-forming materials that can be used as fill and buried with at least 2 feet of non-toxic and non-acid forming materials as to not impact vegetation growth performance standards.

For bond estimation purposes, the Division needs further information about the plan for sealing the portals. Please provide the thickness and height of concrete block seal, base grade % of the entrance area to the concrete block seal, and the distance from the outside entrance to the concrete block seal. (BE & PBB)

Figure 110.2-D has been amended to show the requested details. Since there are no requirements for sealing portals, the block wall has been removed from the figure. The portals will be backfilled with materials found on-site which may include toxic materials, rock, or overburden.

What is the overall slope distance from the top of the highwall area to the base of the slope? The typical cross section figure shows a reclamation contour in green. The area where the reclamation contour line and the existing contour meet and beyond is greater than 3H:1V. (BE)

The distance, as indicated on Figure 110.2-C, varies. The area, or slope, below the green contour line is stable and will not be regraded. This area will only be revegetated as indicated on the reclamation treatment maps.

The text indicates that 20-feet x 1-foot area in a subsoil pile will not be used as reclamation subsoil. There is indication the material will be placed at the base of the highwall and buried. Provide more detail in terms of the expected depth of the acidic subsoil that will be placed and indicate if the material will be distributed throughout the entire highwall area, or just a portion of the area. If it is a portion, provide information about specifically where. (BE)

This deficiency has been previously responded to. All toxic materials will be buried and covered with at least two feet of non-toxic material as to not impact vegetation growth performance standards.

Upon performing field tests the narrative indicates that if acid-materials are discovered they will not be used as top cover. Please indicate what and specifically where these materials will be used for in this event, or how they will be disposed of. (BE)

As indicated in the plan, all toxic materials will be buried and covered with at least two feet of non-toxic material as to not impact vegetation growth performance standards.

Revegetation planting program

Please modify the plan for roughening the surface. There is only enough subsoil to cover the surface six inches deep, and the site will be covered with only about one inch of topsoil. After spreading subsoil and topsoil, the area would be gouged with a trackhoe. Although this is a very good method for roughening the surface, the gouges will mix the subsoil and topsoil to the point that these soils have little benefit. The Division recommends either ripping instead of gouging or applying the soil after the site is gouged. (PBB)

This deficiency was discussed on November 14, 2007 when the permittee met with the Division. It was agreed at the time that the difference in the quality of the topsoils vs. the quality of the subsoils was negligible. Roughening techniques should not impact vegetation growth. The main benefit gained utilizing these techniques is erosion control until vegetation is established.

Please specify the seeding method. The Division recommends broadcast seeding. (PBB)

This method has been identified in the reclamation plan.

R647-4-111 - Reclamation Practices

Please include a commitment to comply with the reclamation practices requirements with full elaboration on each of the practices. (PBB & BE)

This commitment has been included in the Rockland Mine permit.

R647-4-113 - Surety

Based on the information available, the surety is determined to be \$107,500.00. This amount may be adjusted once the plan is adequate and a specific surety determination is made. Surety estimates have been established based on the following: 1. Structures and foundations 2. Infrastructure 3. Mine openings 4. General earthwork 5. Seeding 6. mobilization/demobilization 7. Supervision and construction (includes monitoring) 8. Escalation and other costs. (BE)

Once further details of the reclamation plan have been provided, it is possible the surety amount may change. (PBB)

When the Rockland Mine permit is fully approved, a bond will be estimated using hourly and equipment rates typical of such reclamation work.